Notes on Ryukyu Ferns[1]

DAVID B. LELLINGER

Dr. Egbert H. Walker is currently preparing a new vascular plant flora of Okinawa and the southern Ryukyu Islands which lie between Okinawa and Taiwan. These islands separate the Pacific Ocean from the East China Sea and lie in a northeast–southwest line to the southwest of the Japanese island of Kyushu. The following notes mostly concern those fern species and varieties in the Ryukyu flora for which a change of name is necessary.

COLYSIS × SHINTENENSIS (Hayata) H. Ito, J. Jap. Bot. **11**: 90. 1935, *pro. sp.*

Polypodium ellipticum var. *simplicifrons* Christ, Bull. Herb. Boiss. II, **2**: 832. 1902. TYPE: Kyushu, Japan, base of Mount Nagasaki, *Faurie 4987* (P not seen).

Polypodium wrightii var. *lobatum* Rosenst. Hedwigia **56**: 347. 1916. (as "*lobata*"). TYPE: Shinton [*sic*], Taiwan, *Faurie 215* (S not seen; isotype TI not seen).

Polypodium shintenense Hayata, Icon. Pl. Formosa **8**: 154, *f. 85, 86*. 1919. Based on *P. wrightii* var. *lobatum*.

Colysis elliptica var. *pothifolia* f. *simplex* Ching, Bull. Fan Mem. Inst. Biol., Bot. **4**: 335. 1933. SYNTYPES: Kwantung Prov., China, Tung Ping-hsien, *K. K. Tsoong 1483*; Ko-chow, *Y. Tsiang 2285, 7638*. Hong Kong, China, *Tutcher 10119, Matthew 70* in 1907. Taiwan: *Oldham*.

Colysis simplicifrons (Christ) Tagawa, J. Jap. Bot. **25**: 114. 1950.

Colysis wrightii var. *lacerata* Nakai, Bull. Nat. Sci. Mus. Tokyo, No. **27**: 24. 1950. TYPE: Kyushu, Japan, Prov. Hyuga, Kitago, April 7, 1948, *Nakai* (TNS not seen).

This species demonstrates hybrid irregularity in blade outline (*Figs. 2* and *3*), and may be added to the other examples of Filicineae discussed by Wagner (1962). Its parents probably are the other two species of *Colysis* known from the area, *C. elliptica* (Thunb.) Ching (*Fig. 1*) and *C. wrightii* (Hook.) Ching (Fig. *4*). The hybrids have fewer sporangia and more paraphyses than the parent species. Few of the sporangia develop fully, and those that do develop fail to produce spores and do not dehisce in a normal manner. The fronds of the hybrid specimens are usually

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intermediate between the parents, but a few of them resemble one or the other of the parent species fairly closely. In fact, specimen number 7494 from Tetsuo Amano's herbarium has on a single

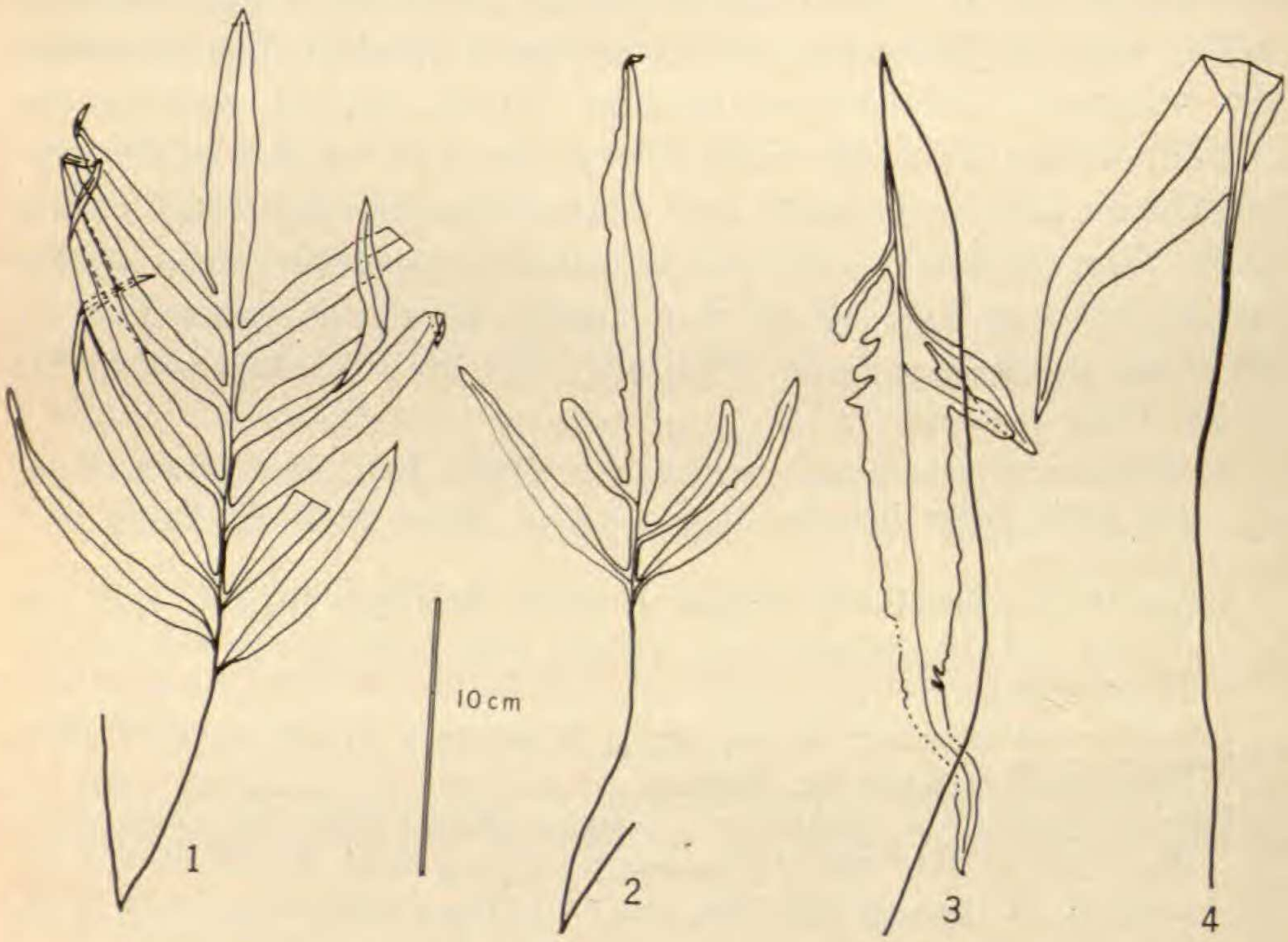

FIG. 1. FROND OUTLINE OF COLYSIS ELLIPTICA (CONOVER 946, US). FIGS. 2, 3. SAME, C. × SHINTENENSIS (TAWADA 1602, HERB. AMANO; OYAMA 796, KYO). FIG. 4. SAME, C. WRIGHTII (SONOHARA 128, US).

rhizome one frond resembling one parent and another resembling the other. The hybrid is known from Saishu Island (Quelpart), Japan, and the Ryukyu Islands.

TECTARIA **dissecta** (Forst.) Lellinger, comb. nov.

Polypodium dissectum Forst. Fl. Ins. Austr. Prodr. 81. 1786, *non* Swartz, 1788.

Dryopteris dissecta (Forst.) Kuntze, Rev. Gen. Pl. **2**: 812. 1891. See p. 262 of Christensen's "Index Filicum" for additional synonyms.

Ctenitopsis dissecta (Forst.) Ching, Bull. Fan Mem. Inst. Biol., Bot. **8**: 321. 1938.

Ctenitis dissecta (Forst.) H. Ito in Nakai & Honda, Nov. Fl. Jap. **4**: 91. 1939.

Holttum (1954, p. 305) reduces *Ctenitopsis* Ching to *Tectaria*, citing the artificial distinction of the former, which is based on the character of free venation alone, without additional supporting characters having been adduced.

TECTARIA **kusukusensis** (Hayata) Lellinger, comb. nov.

Dryopteris kusukusensis Hayata, Icon. Pl. Formosa **4**: 157. 1914.

TYPE: Kusukusu [Island], July 1912, *Hayata & Sasaki* (TI not seen).

Ctenitis kusukusensis (Hayata) H. Ito in Nakai & Honda, Nov. Fl. Jap. **4**: 93. 1939.

Ctenitopsis kusukusensis (Hayata) C. Chr. ex Tard.-Bl. & C. Chr., Notul. Syst., Paris **7**: 87. 1938.

Dryopteris membranoides Hayata may be referable here, but not having seen the type specimen, I hesitate to place it in synonymy on the basis of the description and illustration alone.

THELYPTERIS subg. LEPTOGRAMMA (J. Smith) Reed, Phytologia **17**: 254. 1968.

Leptogramma J. Smith, Hook. J. Bot. **4**: 51. 1841. LECTOTYPE: *L. totta* J. Smith (=*Thelypteris pozoi* (Lag.) Morton), chosen by C. Christensen (Ind. Fil. XXI. 1906).

Stegnogramma Blume, Enum. Pl. Jav. 172. 1828. TYPE: *S. aspidioides* Blume (=*Dryopteris stegnogramma* (Blume) C. Chr.).

Dryopteris subg. *Leptogramma* (J. Smith) C. Chr., Ind. Fil. 250. 1905.

Dryopteris subg. *Stegnogramma* (Blume) C. Chr., Ind. Fil. 250. 1905.

Thelypteris sect. *Leptogramma* (J. Smith) Morton, Amer. Fern J. **53**: 153. 1963.

Thelypteris subg. *Stegnogramma* (J. Smith) Reed, Phytologia **17**: 254. 1968.

That neither *Leptogramma* nor *Stegnogramma* deserves generic status has been discussed by Morton (1966). My choice of subgeneric name is intended to preserve the use of the name *Thelypteris* subg. *Leptogramma* (J. Smith) Reed for those who unite *Leptogramma* and *Stegnogramma*.

10656 TRICHOMANES RADICANS var. **naseanum** (Christ) Lellinger, comb. nov.

Trichomanes naseanum Christ, Bull. Soc. Bot. France **52** [IV, **5**]: 11. 1905. TYPE: Su-tchuen [Sze-ch'uan], China, Mount Omei [Omi], 3000 m alt., *Faber 102* (P not seen).

Vandenboschia radicans var. *naseana* (Christ) H. Ito, J. Jap. Bot. **24**: 124. 1949.

10657 TRICHOMANES RADICANS var. **orientalis** (C. Chr.) Lellinger, comb. nov.

Trichomanes orientalis C. Chr., Ind. Fil. 646. 1906.

Trichomanes japonicum Franch. & Sav. Enum. Pl. Jap. **2**: 207, 618. 1879, *non* Thunb. 1784, *nec* Poir. in Lam. 1808. TYPE: Japan?, *Savatier 1614bis* (P not seen).

Vandenboschia radicans var. *orientalis* (C. Chr.) H. Ito., J. Jap. Bot. **24**: 125. 1949.

TRICHOMANES MAKINOI var. **tosae** (Matsumura) Lellinger, comb. nov.

Trichomanes tosae Christ ex Matsumura, Bot. Mag. Tokyo **24**: 240. 1910. TYPE: Tosa, Shikoku Island, Japan, without locality or collector (TI not seen).

Crepidomanes makinoi var. *tosae* (Matsumura) K. Iwats. Acta Phytotax. Geobot. **17**: 72. 1958.

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U. S. NATIONAL MUSEUM, WASHINGTON, D. C. 20560.

The Fern Collections in Some European Herbaria

C. V. MORTON

In 1954 I was granted a Guggenheim Fellowship to study and photograph fern types and other interesting specimens in various European herbaria. During that year I visited the Botanisch Museum, Utrecht, the Rijksherbarium, Leiden, the Muséum National d'Histoire Naturelle, Paris, the Conservatoire Botanique, Geneva, the Jardin Botanique de l'Etat, Brussels, the Staatsinstitut für Allgemeine Botanik, Hamburg, the Botanical Museum, Copenhagen, the Naturhistoriska Riksmuseet, Stockholm, the Botanical Museum, Oslo, the British Museum (Natural History),